



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE  
United States Patent and Trademark Office  
Address: COMMISSIONER OF PATENTS AND TRADEMARKS  
Washington, D.C. 20231  
[www.uspto.gov](http://www.uspto.gov)

| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
|-----------------|-------------|----------------------|---------------------|------------------|
| 09/935,711      | 08/24/2001  | Hisashi Okada        | Q65953              | 9668             |

7590 02/05/2003

SUGHRUE, MION, ZINN, MACPEAK & SEAS, PLLC  
2100 Pennsylvania Avenue, N.W.  
Washington, DC 20037

[REDACTED] EXAMINER

GARRETT, DAWN L

| ART UNIT | PAPER NUMBER |
|----------|--------------|
| 1774     |              |

DATE MAILED: 02/05/2003

7

Please find below and/or attached an Office communication concerning this application or proceeding.

## Office Action Summary

Application No.

09/935,711

Applicant(s)

OKADA ET AL.

Examiner

Dawn Garrett

Art Unit

1774

-- The MAILING DATE of this communication appears in the cover sheet with the correspondence address  
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM  
THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) Responsive to communication(s) filed on 13 January 2003.
- 2a) This action is FINAL.                    2b) This action is non-final.
- 3) Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) Claim(s) 1-15 is/are pending in the application.
- 4a) Of the above claim(s) 4 is/are withdrawn from consideration.
- 5) Claim(s) 5 is/are allowed.
- 6) Claim(s) 1-3 and 8-15 is/are rejected.
- 7) Claim(s) 6 and 7 is/are objected to.
- 8) Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) The specification is objected to by the Examiner.
- 10) The drawing(s) filed on \_\_\_\_\_ is/are: a) accepted or b) objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) The proposed drawing correction filed on \_\_\_\_\_ is: a) approved b) disapproved by the Examiner.  
If approved, corrected drawings are required in reply to this Office action.
- 12) The oath or declaration is objected to by the Examiner.

### Priority under 35 U.S.C. §§ 119 and 120

- 13) Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).  
a) All b) Some \* c) None of:  
 1. Certified copies of the priority documents have been received.  
 2. Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.  
 3. Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).  
 \* See the attached detailed Office action for a list of the certified copies not received.
- 14) Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application)  
a) The translation of the foreign language provisional application has been received.
- 15) Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

### Attachment(s)

- 1) Notice of References Cited (PTO-892)  
 2) Notice of Draftsperson's Patent Drawing Review (PTO-948)  
 3) Information Disclosure Statement(s) (PTO-1449) Paper No(s) 2.
- 4) Interview Summary (PTO-413) Paper No(s) \_\_\_\_\_.  
 5) Notice of Informal Patent Application (PTO-152)  
 6) Other:

## DETAILED ACTION

### ***Election/Restrictions***

1. Applicants' election of species B) formula (D) of claims 5 and 6 without traverse (wherein Ar<sup>D</sup> is an arylene group, R<sup>D1</sup> and R<sup>D2</sup> are both hydrogen atoms, n<sup>D</sup> is 3, m<sup>D</sup> is 5 and m' is 1) set forth in paper no. 6, received January 13, 2003 is acknowledged. The examiner has searched compound D in entirety and found the polymer set forth by formula D to be allowable subject matter. The examiner has selected species C) formula (E-1) as the next species for consideration. Claims 1-3 and 8-15 read upon the current species under consideration. Claim 4 is withdrawn as non-elected.

### ***Claim Rejections - 35 USC § 102***

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –  
(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

3. Claim 8 is rejected under 35 U.S.C. 102(e) as being anticipated by Hu et al. (US 6,057,048). Hu et al. discloses a light-emitting compound, which reads upon instant formula (E-I). In the formula, L is a linking group which can be a vinylene, ethynylene or the like and "n" is 0-3 (see abstract and col. 4, lines 8-10). Hu et al. is deemed to anticipate the formula of instant claim 8.

Art Unit: 1774

4. Claims 1-3, 11, and 13-15 are rejected under 35 U.S.C. 102(e) as being anticipated by Forrest et al. (US 6,310,360). Forrest discloses an electroluminescent device with an emissive layer comprising a host material such as 4,4'-N,N'-dicarbazole-biphenyl (CBP) which has two heterocyclic groups (see col. 10, lines 40-48) per the instant "heterocyclic compound having at least two hetero atoms" and a phosphorescent sensitizer (see col. 9, lines 18-20) per the instant "phosphorescent compound". The phosphorescent compound may comprise iridium organometallic complexes as given in col. 15, lines 51-60 and col. 17, lines 18-64 per the instant organic metal complex which is an ortho-metallated complex per instant claims 2, 3, 11, 13, and 13-15. The phosphorescence quantum yield requirement of instant claim 13 is deemed to be inherently met, because the iridium complex formula disclosed by Forrest is the same as claimed by applicant. Forrest et al. discloses all components required by instant claims 1-3, 11, and 13-15.

***Claim Rejections - 35 USC § 103***

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

6. Claims 9, 10, and 12 are rejected under 35 U.S.C. 103(a) as being unpatentable over Forrest et al. (US 6,310,360) in view of Hu et al. (US 6,057,048). Forrest et al. is relied upon as set forth above for the rejection of claim 1. Forrest et al. teaches a light emissive layer comprising a host material, fluorescent material, and phosphorescent

Art Unit: 1774

organometallic complex, but fails to teach the host material is the specific formula (E) of instant claims 9 and 10. Forrest does teach that "The invention will work with other molecules known by one of ordinary skill to work as hosts of emissive layers of OLEDs" (see col. 18, lines 65-67). Hu et al. teaches, in analogous art, organic light emitting layers comprising triazine compounds, per instant claim E, which are used as host material in the emissive layer. In the Hu et al. formula, L is a linking group which can be a vinylene, ethynylene or the like and "n" is 0-3 (see abstract and col. 4, lines 8-10). It would have been obvious to one of ordinary skill in the art to have used the Hu et al. light emissive triazine formula host material in the Forrest et al. emissive layer as the host material, because Hu et al. teach the triazine compound is well suited as a light emissive layer host material and Forrest et al. teach known hosts of emissive layers are suitable to the invention. The triazine polymer material (see col. 7, lines 30-38 and abstract) further reads upon the instant claim 12 limitation requiring the organic compound layers of the device comprise a polymer.

***Allowable Subject Matter***

7. Claim 5 is allowed. Claims 6 and 7 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims. The prior art fails to teach a polymeric composition according to formulas (D-I) and (D).

***Conclusion***

8. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

9. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Dawn Garrett whose telephone number is (703) 305-0788. The examiner can normally be reached Monday through Friday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Cynthia Kelly can be reached on (703) 308-0449. The fax phone numbers for the organization where this application or proceeding is assigned are (703) 872-9310 for regular communications and (703) 872-9311 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-2351.

CYNTHIA H. KELLY  
SUPERVISOR  
TECHNICIAN

D.G.  
January 28, 2003

